

PO No	Supplier	Line Item No	Ref No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
PO038421	MEC002-VU	1	1	Nel 30	M17-4-H1150-R2.500	17-4 SS H1150 Round Bar 2.500" : MATERIAL: 17-4 PH CONDITION H1150 receive fl				12	1/18/2018	13	S030421	Stock	1/2/2018	\$ 46.95 / ft	7		\$612.32	Metaux Castle	
		3			M17-4-H1150-R4.000	17-4 SS H1150 Round Bar 4.000" : MATERIAL: 17-4 PH CONDITION H1150 receive fl				5		5	S030422	Stock	1/2/2018	\$ 113.29 / ft	7		\$557.05	Metaux Castle	

Total: 17 18

Plex 1/9/2018 11:43 AM Dart.Plouffe.Sonia

Status: Receiving

Part: **M17-4-H1150-R4.!**

Created: 1/9/18 11:42 AM DART.PLLOUFFE.SO



Serial No: **S030422**

Status: Receiving

Part: **M17-4-H1150-R2.!**

Created: 1/9/18 11:42 AM DART.PLLOUFFE.SO



Serial No: **S030421**



**PACKING SLIP/
CERTIFICATE OF CONFORMANCE**

A. M. Castle & Co.

Page 1 of 1

				Pack Slip No:2802174						
Ship From:	Sold To:			Deliver To:						
A. M. Castle & Co. (Canada) Inc. Toronto 2150 Argentia Road MISSISSAUGA, ON L5N 2K7	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA			DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA						
Date Shipped 02-JAN-2018	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL FLEET	BOL No 2814995						
				Delivery No 121504113						
Shipment Details										
Final Destination Branch -										
Order No 4995065	Line No 2	Item No 398902	Description 4.0000.PD.17CR-4NI.STAINLESS.CF.H1150. 58"LONG SPECIFICATIONS: AMS 5643	Invoice Qty 58.90 IN						
Purchase Order No 38421	Ordered Qty 58.90 FT Details ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: davole@dartaero.com END USER: DART AEROSPACE END USE-COMMERCIAL AIRCRAFT PARTS Mfg/Source CARPENTER TECHNOLOGY									
Mech Number 971414	Mech ID <i>[Signature]</i>	PCS 1	Width (IN) <i>[Signature]</i>	Length (IN) 59.0000						
			Shipped Qty (LBS) <i>[Signature]</i>	209.7794						
<p>We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A. M. Castle & Co. within 60 days of the shipment. Material cut to an incorrect size, or material cut by the customer cannot be returned for credit.</p> <p>Reviewed by Authorized Castle Metals Representative:</p> <table border="1"> <tr> <td><i>[Signature]</i></td> <td>Date 01/09/18</td> <td>Name: <i>[Signature]</i></td> </tr> <tr> <td><i>[Signature]</i></td> <td>Date PC 202102</td> <td>Name: <i>[Signature]</i></td> </tr> </table>					<i>[Signature]</i>	Date 01/09/18	Name: <i>[Signature]</i>	<i>[Signature]</i>	Date PC 202102	Name: <i>[Signature]</i>
<i>[Signature]</i>	Date 01/09/18	Name: <i>[Signature]</i>								
<i>[Signature]</i>	Date PC 202102	Name: <i>[Signature]</i>								



**PACKING SLIP /
CERTIFICATE OF CONFORMANCE**

A. M. Castle & Co.

Page 1 of 1

Shipment Details						Final Destination Branch -		
Ship From: A. M. Castle & Co. (Canada) Inc. Toronto 2150 Argentia Road MISSISSAUGA, ON L5N 2K7	Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Delivery To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA			
Date Shipped 02-JAN-2018	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier LOCAL FLEET	BOL No	Delivery No			
				2814994	121508207			
Order No 4995065	Line No 1	Item No 46602	Description 2.5000 RD.17CR-4NI STAINLESS/CF.H1150.132.0000-756.0000 SPECIFICATIONS: AMS 5643	Ordered Qty 12.00 FT	Invoice Qty 13.0417 FT			
Purchase Order No 38421		Part Number						
Details	ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS <i>SO/8-0191</i>							
Mill/Source OUTOKUMPUS STAINLESS INC.	Heat Number G23367	Mech ID <i>ref</i>	PCS 1	Width (IN) <i>ref</i>	Length (IN) 156.5000	Shipped Qty (LBS) 217.3524		
<p>We hereby certify the material covered by this conification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports <u>no</u> on file subject to examination. All claims for defective material are waived unless made in writing to A. M. Casillo & Co. within 60 days of the shipment. Material cut to the correct size, or otherwise cut by the customer cannot be returned for credit.</p> <p>Reviewed by Authorized Castle Metals Representative: <i>John V. H.</i></p> <p>SALE METALS Date: 01/09/18 Name: <i>John V. H.</i></p> <p>QC-002</p>								



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038421

E-MAILED
E DEC 21 2017

Supplier:	MEC002-VU Metaux Castle P.O. Box 4090 Stn A Toronto ON M5W OE9 Canada	PO No:	PO038421
		PO Date:	11/20/17
		Due Date:	1/18/18
		Purchase Order Revision:	
		Revision Date:	
Ship To:	1270 Aberdeen Street Hawkesbury ON K6A 1K7 Canada Phone: 613-632-5200	Ship-To Contact:	Lavoie, Chantal Phone: clavoie@dart.aero.com
		Via:	Ground
		Pymt Terms:	Net 30
		Freight Terms:	
		Special Comments:	

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M17-4-H1150-R2.500		17-4 SS H1150 Round Bar 2.500" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	1/18/18	12 ft	0 ft	12 ft	\$46.95/ft	\$563.40
2	M17-4-H1150-R3.500		17-4 SS H1150 Round Bar 3.500" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	1/18/18	12 ft	0 ft	12 ft	\$112.93/ft	\$1,355.16
3	M17-4-H1150-R4.000		17-4 SS H1150 Round Bar 4.000" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	1/18/18	4.833 ft	0 ft	5 ft	\$113.29/ft	\$547.53

Grand Total: \$2,466.09

Order Notes

Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable)
- A026 certification of material conformance
- A041 quality management system
- A042 dart notification by supplier
- A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

CJ

Plex 12/21/17 2:00 PM dart.lavoie.chantal

Chantal Lavoie

From: Desbiens, Marc <mdesbien@amcastle.com>
Sent: Wednesday, December 20, 2017 2:20 PM
To: Chantal Lavoie
Subject: RE: quote

Hi Chantal,

price and delivery on mat'l.

17-4 H1150 round bar 2.500" x 12 ft \$ 46.95 FT 1 week ✓
~~17-4 H1150 round bar 3" x 12 ft late February only~~
17-4 H1150 round bar 3.500" x 12 ft \$ 112.93 FT 3 weeks
17-4 H1150 round bar 4" x 6 ft
1 pce 42" &/or 1 pce 58" Long \$ 113.29 FT 1 week

Thanks

Marc Desbiens
Inside sales representative
Castle Metals, Montreal, QC
Direct line 514-795-8176
1-800-806-6660 ext 52226
Fax # 1-855-892-6370
Customized Supply Chain Solutions for Your Metal Needs

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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M17-4-H1150-R1.500 PO / BATCH NO.: 038921/5030421
 DATE: JAN 09 2018

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 13"
 QUANTITY INSPECTED: 13"
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 2.500
 THICKNESS RECEIVED: 2.500
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORROSION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N	Astm A564
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N	
PHOTO REQUIRED	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N	Heat# G-23367
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y <input type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____	
DATE: <u>11</u>	DATE: _____	
9-89	JAN 09 2018	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M17-4H1150-R4.000 PO / BATCH NO: 038421/SC30422
 DATE: JAN 09 2018

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 5"
 QUANTITY INSPECTED: 5"
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 4.000
 THICKNESS RECEIVED: 4.000
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<u>Y</u> <u>N</u>	
CORRECT FINISH	<u>Y</u> <u>N</u>	
CORROSION	<u>Y</u> <u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u> <u>N</u>	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u> <u>N</u>	<i>Astm A564</i>
CORRECT THICKNESS	<u>Y</u> <u>N</u>	
PHOTO REQUIRED	<u>Y</u> <u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u> <u>N</u>	<i>Heat # 971414</i>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u> <u>N</u>	
CORRECT M# ON THE MATERIAL	<u>Y</u> <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<u>Y</u> <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<u>Y</u> <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u> <u>9-89</u>	SIGNED OFF BY: _____
DATE: <u>JAN 09 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

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CERTIFICATE OF TESTS
CERT SERIAL# 001018963

CARPENTER

Carpenter Technology Corporation
101 West Bern Street Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

04/15/16
CUSTOMER: AM CASTLE & CO

3400 N WOLF RD
FRANKLIN PARK IL 60131

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

- THE RECORDING OF FAKE TEST RESULTS OR FRAUDULENT STATEMENTS OR FAKES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL "STATUTES" INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- IN ADDITION AND UNLESS TECHNICAL DATA REFERRING TO THE RESULTS OF ANALYSIS AND TESTS MADE ON SAMPLES PROVIDED FROM THE LOT FOR INSPECTION, DATA RECORDS CAN BE TRACED BY REFERENCE TO THE ORIGINAL TEST SHEET NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADON, ALPHA AND RADIUM SOURCE CONTAMINATION.
- THIS CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITER'S CONSENT OR APPROVAL OF THE COMPANY CONCERN.

SELLER: VERKAUFER / VENDEUR PAGE 1 OF 2

HVL

Customer Name/Address	Carpenter Test Address	Date Received	Serial Number
367314	W83771	04/15/16	1510.000

HEAT NUMBER: SCHMELZE-NR. N° DECOULEE:

971414

UNS NUMBER S17400

PRODUCT DESCRIPTION: TYPE 17-4 SOLUTION ANNEALED COLD FINISH AGED CONDITION
----- H1150
PART NUMBER: 39902

SPECIFICATION: AM CASTLE AMC 3174 04 UNS S17400 REV 38 (12/11/15)
----- AMS 2303 REV F (087 /10)
AMS 5643 MODIFIED COND H1150 REV T (12/ /13) (MOD COND H1150)
ASTM-A564-13 COND H1150 TYPE 630
ASME-SA564 COND H1150 2013 EDITION

SIZE 4.000000 IN. (101.60 MM) RD BAR

HEAT CHEMISTRY (WT%):

C	MN	SI	P	S	CR
0.03	0.76	0.27	0.019	0.023	15.26
NI	MO	CU	N	CB	TA
4.26	0.16	4.01	0.031	0.25	LT .02

CB+TA
0.25

NO WELD REPAIR.

MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM AND ALPHA SOURCE
CONTAMINATION.

THIS HEAT MELTED BY THE ELECTRIC ARC/AOD PROCESSES

DISCS MACROETCHED AND APPROVED

HARDNESS AS SHIPPED 311HBW (33HRC)



CHARPY V-NOTCH IMPACT, TESTED AT	70 F	LONGITUDINAL
FT-LBS (JOULES)	92.0 { 125 }	90.0 { 122 }
LAT. EXP. (INCHES (MM))	.0560 { 1.422 }	.0560 { 1.422 }
SHEAR FRACTURE (%)	70.0	80.0
AVERAGE: 93.0 FT/LB		80.0
SPECIMEN SIZE: 10MM X 10.0MM		

(T) TRANSVERSE	(L) LONGITUDINAL
YIELD STRENGTH, (0.20 %) KSI (MPA)	120.0 { 827 }
TENSILE STRENGTH, KSI (MPA)	140.0 { 965 }
ELONGATION IN 2.00", %	21.0
REDUCTION OF AREA, %	61.0

MAGNETIC PARTICLE: FREQUENCY = 0 / SEVERITY = 0

CONTINUED ON NEXT PAGE

CERTIFICATE OF TESTS
CERT SERIAL# 001018963



Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel. (610) 208-2000 (800) 338-4592

04/15/16
CUSTOMER/BESTELLER/CLIENT
AM CASTLE & CO

3400 N WOLF RD
FRANKLIN PARK IL 60131

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

- (1) RECORDING OR FALSE STATEMENT OR FRAUDULENT STATEMENTS ON THIS DOCUMENT MAY BE PUNISHED AS A FEDERAL OFFENSE UNDER FEDERAL STATUTES INCLUDING FEDERAL TAX CODE TITLE 18, CHAPTER 31.
- (2) SAMPLES AND OTHER INFORMATION DATA REPORTED IN THE RESULTS OF ANALYSIS AND TESTS MADE ON SAMPLES COLLECTED HEREIN FOR METAL LOGIC DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM HARMFUL RADIONUCLIDES AND GAMMA-RADIATION CONCENTRATIONS.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FORMS WITHIN THE GREATER CONSOLIDATED CARPENTER TECHNOLOGY CORPORATION.

SELLER VERKÄUFER VENDEUR PAGE 2 OF 2

HVL

CUSTOMER ORDER NUMBER / KUNDENORDERNUMMER	TEST NUMBER / TESTNUMMER / NUMERO D'ESSAI	DATE ISSUED DATE	REDUCTION RATIO
367314	W83771	04/15/16	1510.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE:
MICROSTRUCTURE - FERRITE 971414 UNS NUMBER S17400

4.00%

MILL HEAT TREATMENT:		AGE
TYPE	SOL ANL	1150 (621C)
TEMP	1900F (1038C)	240.00 MINUTES
TIME	60.00 MINUTES	AIR
4 QUENCH	AIR	

MELTED IN THE USA

REDUCTION RATIO - 6:1

MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009. THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 34 DATED 11/18/15.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2013 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 13-1996R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

SHARON S. BRUNSON
QUALITY ASSURANCE REP.
CARPENTER TECHNOLOGY CORPORATION

Sharon Brunson

This certificate is made to the customer printed on this form. Carpenter neither makes nor assumes responsibility for any representation or certification by other parties.
Die vorliegende Zeichnung ist nur für den/die/diese Kunden bestimmt. Carpenter übernimmt weder die noch keine Haftung für die ausgetragenen Daten oder Zeichnungen.
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'est pas et ne peut pas être tenu responsable de toute autre déclaration ou certification faite par une autre partie.



Certificate of Test

Page: 2

HEAT G23367 ORDER 666310/ 01 BOL 0237083 * CERTIFICATION * 09/30/16

SHIP TO:
A.M.CASTLE & CO.
3800 ENTERPRISE DRIVE

JANESVILLE 535460000

CHEMICAL COMPOSITION			
Carbon (C)	.027	Manganese (Mn)	.810
Phosphorus (P)	.022	Sulphur (S)	.025
Silicon (Si)	.330	Chromium (Cr)	15.310
Nickel (Ni)	4.240	Cobalt (Co)	.060
Copper (Cu)	3.240	Moly (Mo)	.320
Nitrogen (N)	.036	Columbium (Cb)	.250
Titanium (Ti)	.010	Aluminum (Al)	.010
Tin (Sn)	.012	Boron (B)	.003
Tantalum (Ta)	.010	Vanadium (V)	.070
Tungsten (W)	.050		
Columbium/			
Tantalum (Cb+Ta)	.260		
Iron (Fe)	Balance		
Frequency	.000	Severity	.000
Melt Practice	EAF		
Refining Practice	AOD		
De-long Ferrite			

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes. We hereby certify that the test results shown in this report are correct and accurate as contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

M.F. Marcanio, Quality Manager

Castle Metals
HEAT NUMBER G23367
MECHANICAL ID 46602
ITEM CODE 381889
LOT NUMBER 10-3-16
PO NUMBER 381889
RECEIPT DATE 10-3-16
SUPPLIER Outokumpu
SPECIFICATION -
LCS -
COMMENT -
APPROVED MFM



Certificate of Test

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----- YOUR ORDER & DATE -----
361889 4/15/16 CUST# 0254001 CUST TAG#46602

----- ITEM DESCRIPTION -----
GRADE 17-4 Ship Condition H1150
Size 1/4 RND CFA H1150 2.5000 x 144.000 RL
Country of Melt: UNITED STATES
NAFTA Country of Origin is Country of Melt
No weld repair
Free of mercury contamination, Free of radiation contamination
No WEEE relevant substances; Meets EU electrical ROHS

Total Bundles 3 Total Weight 5138 Approx. Hot Red. Ratio 53:1

WG 2070944 Bundles: 1A, 1B, 1C

SPECIFICATIONS

THE PRODUCTS LISTED ON THIS MILL TEST REPORT SATISFY PREFERENCE CRITERION B AS DEFINED IN ARTICLE 401 OF THE NORTH AMERICAN FREE TRADE AGREEMENT.

AMS 2303F UNS S17400, AISI 630
ASME SA564 2015 Ed. ASTM A484 16
ASTM A564 13 Type 630 DFARS 252.225.7009 10/4/11
AM Castle 3174-04 R38 Sol Ann 1900F/1Hr/Rapid Cool
Aged at 1150F for 4 hr, AC AMS 5643U Chemistry
EN 10204 Type 3.1 Document
1900F/ 1hour/ Air Cool
1150F/ 4hours/ Air Cool

MECHANICAL & OTHER TESTS

Hardness as shipped	336	HB	Tensile strength, KSI (MPa)	146.0 (1007)
Hardness as shipped	036	HRC	0.2% Yield Strength, KSI (MPa)	134.0 (924)
Grain size	9.0			
Micro	OK			
Intergranular corrosion			Elongation % in 4D	21.0
Macro	OK		Reduction of area %	67.0
Ferrite	1.0		Charpy (ft lb) 111 97 98 Avg 102	
			Charpy Test Temperature RT	
			Lateral Exp (mils) 61 54 49 Avg 54	

-- Continued --